

1. A switched reluctance electric machine comprising:

    a stator including a plurality of circumferentially-spaced stator segment assemblies that include a stator segment core and winding wire that is wound around said stator segment core;

    a rotor defining a plurality of rotor poles, wherein said rotor tends to rotate relative to said stator to maximize the inductance of an energized winding; and

    a sensorless drive circuit that derives rotor position and that energizes said winding wire around said stator segment assemblies to control operation of said switched reluctance machine based on said derived position of said rotor.

11. A sensorless switched reluctance electric machine comprising:

    a stator;

    a rotor;

    a machine housing;

    a plurality of circumferentially-spaced stator segment assemblies that are arranged around an inner surface of said machine housing;

    said stator segment assemblies defining a salient stator pole that extends in a radially inward direction;

    said stator segment assemblies including a stator segment core and winding wire that is wound around said stator segment core; and

    a sensorless drive circuit that is connected to said winding wire, that derives rotor position and that energizes said winding wire around said stator segment

assemblies to control operation of said switched reluctance machine based on said derived position of said rotor.

21. A sensorless switched reluctance electric machine comprising:

- a machine housing;
- a rotor that rotates relative to said machine housing;
- a stator that is mounted on an inner surface of said machine housing, said stator including a plurality of circumferentially-spaced stator segment assemblies, wherein said stator segment assemblies include a stack of stator plates forming a stator segment core and winding wire that is wound around said stator segment core, and wherein each of said stator plates has a generally "T"-shaped cross-section, a radially outer rim section, and a tooth section that extends radially inwardly from a center portion of said radially outer rim section; and
- a sensorless drive circuit that derives rotor position and that energizes said winding wire around said stator segment assemblies to control operation of said switched reluctance machine based on said derived rotor position.